REMARKS

A Final Office Action issued on March 30, 2004. The following remarks are submitted in response thereto.

It is submitted that these claims, as originally presented, are patentably distinct over the prior art cited by the Examiner, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes to these claims, as presented herein, are not made for the purpose of patentability within the meaning of 35 U.S.C. §101, §102, §103 or §112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

Claims 17, 19, and 25 have been canceled. Claims 1-15 and amended claims 16, 18, and 20-24 are in this application.

Claims 1-15 were allowed.

Claims 16-25 were rejected under 35 U.S.C. 102(e) as being anticipated by Reininger et al.

Claim 16 as presented herein recites in part the following:

> "wherein said source video data is **always** encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is **always** different from the optimum quantization step size." (Underlining and bold added for emphasis.)

Accordingly, in the method of claim 16, the source video data is **always encoded using the predetermined quantization step and the optimum quantization step** in which the predetermined quantization step size is always different from the optimum quantization step size. On the other hand, the apparatus of Reininger does not appear to **always** perform encoding using predetermined quantization step **and** an optimum quantization step which is always different

from the predetermined quantization step. Instead, Reininger appears to mainly utilized "fixed" quantization values. In support thereof, reference is made to lines 59-64 of column 2 of Reininger wherein the following is recited:

> "Quantization in the present invention **is nominally performed using fixed quantization values** as long as the total coded data does not exceed a predetermined amount. If it does then only the macroblocks of data that exceed certain limits are adaptively quantized, **with all other macroblocks undergoing fixed quantization**." (emphasis ours)

Reference is also made to lines 3-11 of column 4 of Reininger wherein the following is recited:

> "If the value of xs-frac is less than zero, the number of coded bits is within the set limits, and the frame is coded in normal VBR mode with the fixed quantization used in the first compression pass. If it is not, a second compression pass is invoked. In the second pass, fixed quantization is used for all macroblocks whose size is less than ThV. For the remaining macroblocks a larger quantization factor is selected...."

Thus, it is respectfully submitted that claim 16 is distinguishable from Reininger. For somewhat similar reasons, it is also respectfully submitted that claims 18and 20-24 are distinguishable from Reininger.

This is in response to the Examiner's statement of reasons for the indication of allowable subject matter included in paragraph 4 of the present Office Action. To the extent the Examiner's statement states, implies or is construed to mean that claims are allowable over the prior art of record because the Examiner believes such claims should be interpreted to include one or more features or limitations not recited therein, Applicants' attorney disagrees with such an interpretation. Moreover, it is Applicants' contention that there is no particular limitation in the allowed claims that are more critical than any other. The issuance of the Examiner's

statement of reasons for the indication of allowable subject matter should not be construed as a surrender by the Applicant of any subject matter. It is the intent of the Applicant, by his attorney, to construe the allowed claims so as to cover the invention disclosed in the instant application and all equivalents to which the claimed invention is entitled.

In view of the foregoing, entry of this amendment and these remarks and withdrawal of the rejection of claims 16, 18, 20-24 and the allowance of this application with claims 1-16, 18, and 20-24 are respectfully requested.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

Please charge any fees incurred by reason of this response and not paid herewith to Deposit Account No. 50-0320.

Respectfully submitted,
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"Version with markings to show changes made."

IN THE CLAIMS:

16. (Twice Amended) An encoding method for encoding source video data, the method comprises the steps of:

encoding said source video data with a predetermined quantization step size to generate first encoded data;

detecting a difficulty of the encoding process of source video data based on bit amount of said first encoded data;

deciding an optimum quantization step size, said optimum quantization step size being varied depending on said difficulty so that said optimum quantization step size becomes smaller when said source video data is more complex and said optimum quantization step size becomes larger when source video data to be encoded is more simple; and

encoding said source video data by using said optimum quantization step on encoding unit basis,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value,

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

Cancel claim 17.

18. (Twice Amended) An encoding method for encoding source video data, the method comprises the steps of:

encoding said source video data with a predetermined quantization step size to generate first encoded data;

detecting a difficulty of the encoding process of source video data based on amount of said first encoded data;

calculating an allocated code quantity which is varied depending on said difficulty so that said allocated code quantity is more increased when said source video data is more complex and said allocated code quantity is more decreased when source video data is more simple; and

encoding said source video data by an optimum quantization step size based on said allocated code quantity,

wherein the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

Cancel claim 19.

20. (Twice Amended) An encoding method for encoding source video data, the method comprises the steps of:

detecting motion vector of a macro block of said source video data;

encoding said macro block of said source video data by using a predetermined quantization step size and said detected motion vector to generate first encoded data;

detecting a difficulty of the encoding process of source video data based on amount of said first encoded data;

deciding an optimum quantization step size, said optimum quantization step size being varied depending on said difficulty so that said optimum quantization step size becomes smaller when said source video data is more complex and said optimum quantization step size becomes larger when source video data to be encoded is more simple; and

encoding said macro block of said source video data by using said optimum quantization step and said detected motion vector,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

21. (Twice Amended) An encoding method for encoding source video data, the method comprises the steps of:

selecting a predictive mode of a macro block of said source video data;

encoding said macro block of said source video data by using a predetermined quantization step size and said selected predictive mode to generate first encoded data;

detecting a difficulty of the encoding process of source video data based on amount of said first encoded data;

deciding an optimum quantization step size, said optimum quantization step size being varied depending on said difficulty so that said optimum quantization step size becomes smaller when said source video data is more complex and said optimum quantization step size becomes larger when source video data to be encoded is more simple; and

encoding said macro block of said source video data by using said optimum quantization step and said selected predictive mode,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

22. (Twice Amended) An encoding apparatus for encoding source video data, the apparatus comprising:

means for detecting motion vector of a macro block of said source video data;

first encoding means for encoding said macro block of said source video data by using a predetermined quantization step size and said detected motion vector to generate first encoded data;

means for detecting a difficulty of the encoding process of source video data based on amount of said first encoded data;

means for deciding an optimum quantization step size, said optimum quantization step size being varied depending on said difficulty so that said optimum quantization step size becomes smaller when said source video data is more complex and said optimum quantization step size becomes larger when source video data to be encoded is more simple; and

second encoding means for encoding said macro block of said source video data by using said optimum quantization step and said detected motion vector,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

23. (Twice Amended) An encoding apparatus for encoding source video data, the apparatus comprising:

means for selecting a predictive mode of a macro block of said source video data;

first encoding means for encoding said macro block of said source video data by using a predetermined quantization step size and said selected predictive mode to generate first encoded data;

means for detecting a difficulty of the encoding process of source video data based on amount of said first encoded data;

means for deciding an optimum quantization step size, said optimum quantization step size being varied depending on said difficulty so that said optimum quantization step size becomes smaller when said source video data is more complex and said optimum quantization step size becomes larger when source video data to be encoded is more simple; and

second encoding means for encoding said macro block of said source video data by using said optimum quantization step and said selected predictive mode,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

24. (Twice Amended) An encoding apparatus for encoding source video data, the apparatus comprising:

first encoding means for encoding said source video data with a predetermined quantization step size to generate first encoded data;

second encoding means for encoding said source video data based on supplied quantization step size to generate second encoded data;

transmitting buffer for buffering said second encoded data; and

control means for detecting a difficulty of the encoding process in said first encoding means, and for deciding said quantization step size, said optimum quantization step size being varied depending on said difficulty so that said quantization step size becomes smaller when said source video data is more complex and said quantization step size becomes larger when source video data to be encoded is more simple, and said quantization step size being dependent on a remaining capacity of said transmitting buffer so as to suppress overflow and underflow in said transmitting buffer,

wherein the predetermined quantization step size has a fixed value and the optimum quantization step size has a non-fixed value, and

wherein said source video data is always encoded using said predetermined quantization step and said optimum quantization step in which the predetermined quantization step size is always different from the optimum quantization step size.

Cancel claim 25.